

ART 34 AMDT

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CLAIMS

1. A metal-containing composition substantially comprising

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(i) at least one water soluble metal compound which forms metal ions when dissolved in water, which consists of compound of at least one of the following: zinc, magnesium, copper, selenium, iron, nickel, titanium, 10 vanadium, and aluminium,

(ii) at least one metal ion binding, complexing or sequestering agent other than chelate or glutamate,

15 (iii) at least one acid, and

(iv) water

said composition having a pH of less than 3 and an 20 electrolytic potential in excess of 50 millivolts.

2. A composition as claimed in claim 1 wherein said metal compound is a compound of one of the following mineral metals: copper, magnesium, selenium, iron and 25 zinc.

3. A composition as claimed in claim 1 or 2 which essentially consists of (i) - (iv) as defined in claim 1.

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4. A composition as claimed in any preceding claim which consists of (i) - (iv) as defined in claim 1 apart from any unavoidable impurities.

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5. A composition as claimed in any preceding claim wherein (i) is an inorganic salt of zinc, magnesium, copper, selenium, iron, nickel, titanium or vanadium.

10 6. A composition as claimed in claim 5 in which said salt (i) is sulphate, chloride or nitrate.

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7. A composition as claimed in claim 5 or 6 in which said salt (i) is a zinc, magnesium, copper, iron or selenium salt.

8. A composition as claimed in claim 7 in which (i) is zinc sulphate, magnesium sulphate, iron sulphate or copper sulphate.

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9. A composition as claimed in any preceding claim wherein (ii) comprises one or more inorganic ammonium compounds capable of dissociating in water into ammonium ions such as one or more of ammonium sulphate, ammonium chloride, ammonium phosphate, and ammonium citrate.

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10. A composition as claimed in claim 9 wherein (ii) is ammonium sulphate.

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11. A composition as claimed in any preceding claim in which (iii) comprises one or more of sulphuric, hydrochloric, phosphoric and citric acids.

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12. A composition as claimed in claim 11 wherein (iii) is concentrated sulphuric or hydrochloric acid.

13. A composition as claimed in any preceding claim in which (iv) consists essentially of distilled water or entirely of distilled water apart from any unavoidable impurities.

14. A composition as claimed in any preceding claim in which the pH value is less than 2.5.

15. A composition as claimed in claim 14 in which the pH value is 2 or less such as in the range of 1 to 2.

16. A composition as claimed in any preceding claim in which the electrolytic potential is in excess of 100 millivolts.

17. A composition as claimed in claim 16 in which the electrolytic potential is in excess of 200 millivolts.

18. A composition as claimed in claim 17 in which the electrolytic potential is in excess of 300 millivolts and

preferably at least 340 millivolts.

19. A composition as claimed in claim 18 in which the electrolytic potential is in the range of 340 to 400 5 millivolts.

20. A method of making a composition as claimed in any preceding claim comprising dissolving (i) in distilled water, adding (ii) and mixing or allowing to dissolve, 10 then adding (iii) whilst simultaneously monitoring the pH and electrolytic potential of the composition until a required value of each measurement is obtained.

21. A method as claimed in claim 20 in which (i) is as 15 defined in any one of claims 5 to 8.

22. A method as claimed in claim 20 or 21 in which (ii) is as defined in claim 9 or 10.

20 23. A method as claimed in any one of claims 20 to 22 wherein (iii) is as defined in claim 11 or 12.

24. An antimicrobial, antiviral, antiretrovirus or antifungal formulation comprising a composition as claimed 25 in any one of claims 1 to 19 in conjunction with a pharmaceutically acceptable carrier, diluent or excipient therefor.

25. Use of a composition as claimed in any one of claims 1 to 19 for the treatment of water, or predominantly water - containing material.

5 26. Use of a composition as claimed in any one of claims 1 to 19 for the treatment of sewage, industrial or municipal wastes.

10 27. Use of a composition as claimed in any one of claims 1 to 19 for the treatment of foodstuffs as a disinfectant or bactericide, particularly copper containing such compositions.

15 28. Use of a composition as claimed in any one of claims 1 to 19 for the preservation of plants, flowers, trees or shrubs.

20 29. Use of a composition as claimed in any one of claims 1 to 19 in the treatment of a metal for coating, sealing, plating or otherwise forming an anti-corrosive layer upon a metallic substrate.

30. Use as claimed in claim 29 wherein the composition contains one or more of copper, nickel, titanium or 25 vanadium.

31. A composition as claimed in any one of claims 1 to 19 for use as a medicament for treating or preventing a

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pathogenic disease or disorder.

32. Use of a composition as claimed in any one of claims 1 to 19 in the preparation of a medicament for treating or preventing a pathogenic disease or disorder.

33. Use of a composition as claimed in any one of claims 1 to 19 as an antimicrobial, antiviral, anti-retrovirus, or antifungal formulation.

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